

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE**

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AMPEX CORPORATION,

Plaintiff,

v.

EASTMAN KODAK COMPANY,  
ALTEK CORPORATION and CHINON  
INDUSTRIES, INC.,

Defendants.

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C.A. No. 04-1373-KAJ

**DECLARATION OF JAMES STORER IN SUPPORT OF DEFENDANTS' OPENING  
CLAIM CONSTRUCTION BRIEF**

I, James Storer, declare as follows:

1. I have been engaged by counsel for Defendants Eastman Kodak Company and Altek Corporation ("Defendants") as a technical expert in connection with this litigation.
2. I understand that Plaintiff Ampex Corporation ("Ampex") filed this lawsuit in October 2004 alleging infringement by Defendants of U.S. Patent No. 4,821,121 (the "'121 patent").
3. I also understand that this Declaration is being submitted in support of Defendants' Opening Claim Construction Brief.
4. On April 24, 2006, I submitted an Initial Expert Report in connection with this litigation. I was asked and provided my expert opinion concerning whether the asserted claims (7, 8, 10-15) of the '121 patent are infringed by the accused camera models. In that report, I provided my opinion that the asserted claims of the '121 patent are not infringed by any accused

camera.

5. As part of my analysis as to whether the asserted claims of the '121 patent are infringed by the accused camera models, I was asked for my opinion with respect to the meaning of certain claim terms included in the asserted claims of the '121 patent as they would be understood by one of ordinary skill in the pertinent art at the time of the claimed invention.

### **QUALIFICATIONS**

6. My background and experience are correctly and accurately set forth in paragraphs 5-16 of my Initial Expert Report.

7. I am currently a Professor in computer science at Brandeis University. I have worked in the field of computer science, including work relating to data compression, image processing, and video processing, for over thirty years.

8. I received my B.A. in Mathematics and Computer Science from Cornell University in 1975, my Masters in Electrical Engineering and Computer Science from Princeton University in 1977, and my Ph.D. in Electrical Engineering and Computer Science from Princeton University in 1979.

9. Between 1981 and the present, with the exception of one year during which I was a visiting professor at Harvard University, I have worked in the Computer Science Department at Brandeis University. Between 1981 and 1986, I was an Assistant Professor; between 1986 and 1992, an Associate Professor; and since 1993, I have been a full Professor. Between 1993 and 2002, I served as the Chairman of the Computer Science Department.

10. I am a member of the ACM and the IEEE Computer Society. I have served as a

referee for numerous journals including: JACM (Journal of the ACM), SICOMP (SIAM Journal of Computing), JPDC (Journal of Parallel and Distributed Computing), Algorithmica, IPL (Information Processing Letters), IPM (Information Processing and Management), Acta Informatica, TCS (Theoretical Computer Science), Journal of Algorithms, Networks, IEEE Journal of Robotics and Automation, IEEE Transactions on Information Theory, IEEE Transactions on Computing, and IEEE Transactions on Image Processing.

11. I am the founder of the Annual Data Compression Conference (DCC), and have served as Conference Chair from 1991 to present. This is the leading conference devoted entirely to Data Compression. Papers accepted for presentation at DCC are subject to a selective peer review process, and many major research projects and results in the field have first been presented at DCC. A hardbound copy of the proceedings is published by the IEEE Computer Society each year.

12. My research work has included, among other areas, research relating to data compression (including text, images, and video), data archiving, image and video processing, and parallel computing. I have authored or co-authored over one hundred technical publications, many of which have been peer-reviewed, in these and related areas. I have published several books, including one on data compression and a textbook on computer algorithms and data structures that includes significant material on data compression. In addition, I have recently edited a book on Hyperspectral Data Compression, in which I am coauthor of one of the chapters.

13. I am also the inventor on two United States patents, and co-inventor of a patent pending.

14. For the purposes of this declaration, my opinions are based on my review of the '121 patent, the asserted claims, the file history of the '121 patent, the references cited during prosecution, dictionary definitions, and my knowledge of the relevant art as defined below. In connection with this case, I have also reviewed technical documents produced by Kodak and Altek in this litigation and in the ITC investigation, and numerous transcripts of depositions taken by the parties in this case, as well as ITC trial testimony in written form. I reviewed the expert reports submitted on behalf of Ampex, the plaintiff in this matter, and Ampex discovery responses. I have inspected a number of the accused cameras and spoken to numerous Kodak engineers about the accused cameras.

#### **OVERVIEW OF THE TECHNOLOGY OF THE '121 PATENT**

15. The field of technology in which Ampex filed the '121 patent relates to the electronic generation and storage of still images generated from video. Specifically, the technology relates to television production systems designed to store and display images depending upon the specialized needs of television networks, production houses and cable program producers.

16. The still store system as disclosed in the '121 patent relates to a system for storing, accessing and exporting broadcast television signals in the form of stills. Any selected one of the stored stills was sent to a frame store from which data defining the image was repetitively read out to generate a continuously displayed television image. See '121 patent, col. 1, lines 17-21.

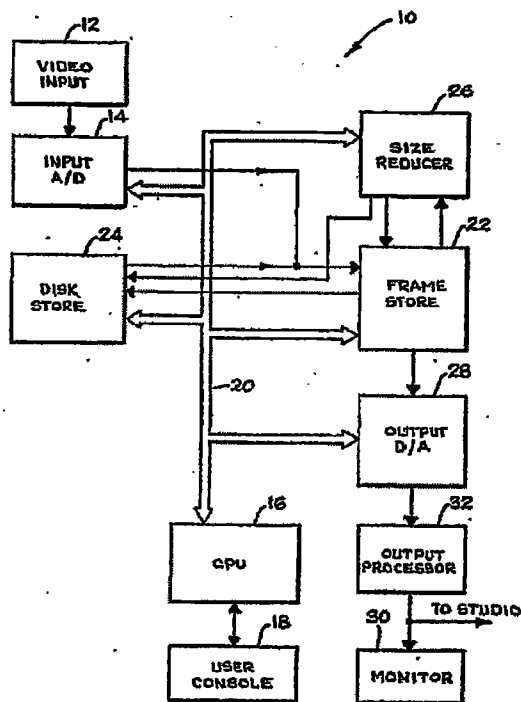
17. The patent discloses a very simple structure that includes a frame store, which is random access memory, for temporary storage of video images; a disk store, described in the

claims as bulk or image store, for long-term storage of video images; a CPU, which is a processing unit for controlling the still store system; and a monitor, which displays the video images. See figure below.

18. The '121 patent describes the size reducer as optional. The patent states:

[W]hen video data received from disk store 24 does not contain a corresponding quarter spatial resolution copy, size reducer 26 *may be employed* to generate a quarter spatial resolution copy for subsequent transfer to either frame store 22 or disk store 24. Hence, any time frame store 22 receives a video image frame that does not have a corresponding quarter resolution copy, the size reducer 26 *may be used* to make such a copy.

('121 patent, col. 4, lines 7-15 (emphasis added).)



'121 Patent – Sole Figure

19. The still store system is disclosed to be operable in two modes. In a first mode, the frame store receives from the disk store, stores and repetitively generates a full spatial

resolution output image frame. In a second mode, the frame store receives from the disk store and stores a plurality of reduced spatial resolution image frames.

20. I understand, based on my own experience, as well as my review of the '121 patent, its file history, the references cited and used to reject multiple iterations of claims in that file history, and from the expert reports of defendants' other experts, that the following still store features were wholly conventional as of April 8, 1982 (one year prior to the filing of the initial application leading to the issuance of the '121 patent):

- Video feeds with an analog to digital converter and a frame store for storing one or more frames of video pixel data.
- Size reducers to accept "full" size video pixel data from frame stores, and to return reduced size images back to the frame store.
- Saving full and reduced size video pixel images on a disk.
- Assembling multiple reduced size images in a frame store.
- Displaying multiple reduced size images as a mosaic.

### **PROSECUTION HISTORY**

21. The initial application leading to the '121 patent was filed on April 8, 1983.

22. The initial application that was filed in April 1983 consisted of a specification and one figure. The initial application also contained 14 claims, but it was a long time before the claims that were ultimately allowed were submitted, and the initial claims from the original application are not found in the '121 patent. Daniel Beaulier was listed as the sole inventor on the application.

23. The initial 14 claims were rejected in the first round (Paper No. 3) as being indefinite for failing to particularly point out and distinctly claim the subject matter regarded as the invention and also based on a prior art reference located by the Examiner, an article by Hugh

Boyd describing some of the Quantel DLS 6000 electronic still store entitled, “The DLS 6000: A New Digital Still Store Library System.”

24. Over the next three years, the claims were rejected multiple times as indefinite and as obvious over the Boyd reference. Ampex amended and abandoned claims, and filed a continuation application as it attempted to correct the indefiniteness problems and overcome the prior art.

25. In November 1986, in Paper No. 17, Ampex added 13 new claims, which Ampex acknowledged in a subsequent interview were different in scope from the earlier rejected claims. The pending application was abandoned in favor of filing yet another continuation application on February 24, 1987. (Paper No. 23.)

26. In 1988, the pending claims from the second continuation application were again rejected for being indefinite. (Paper No. 26.) Several of the pending claims were also rejected as being anticipated by a Quantel patent naming Richard Taylor as the inventor, U.S. Patent No. 4,302,776 (the “‘776 patent). (Paper No. 26.) In response, Ampex again cancelled some claims, amended others, added one new claim, and sought to argue over the indefiniteness rejections and the ‘776 patent. (Paper No. 28.)

27. The Examiner responded by allowing some of the pending claims, objecting to others, and rejecting the rest for the same reasons as the claims had been rejected in Paper No. 26. (Paper No. 29.) Ampex responded by amending some claims, canceling others, and arguing for the patentability of the pending claims that had not been allowed. (Paper No. 30.)

28. Ampex held an interview with the Examiner to discuss further amending certain

of its claims. (Paper No. 31.) The Examiner made some amendments and then issued a Notice of Allowability that detailed amendments to the claims that Ampex had agreed to, and allowed the 15 claims that can be found in the '121 patent to issue. (Paper No. 32.)

29. Ampex responded to the Notice of Allowance, and thanked the Examiner for the amendments suggested by him in the telephone interview and entered via his Examiner's amendment with the Notice of Allowance. (Paper No. 34.)

30. The '121 patent issued April 11, 1989. It expired on April 11, 2006.

### **THE ASSERTED CLAIMS**

31. I understand that claims 7, 8 and 10-15 are being asserted against the Defendants in this action (not all claims are being asserted against all cameras). These are all independent claims.

32. Some of the asserted claims of the '121 patent can be traced back to Paper No. 17, originally submitted on November 20, 1986, in which Ampex added 13 claims to the application. These newly added claims were different in scope from the prior claims submitted, and necessitated the abandonment of the second pending application, and the filing of a new continuation. As previously mentioned, these 13 additional claims were amended over the next several years, prior to issuance.

33. I have attached to this Declaration as Exhibit "A" a chart that shows the origins of each of the asserted claims as well as some of the key amendments to the claims.

34. Claim 7 of the '121 patent corresponds to claim 18 of the first continuation application. (Paper No. 17.) Claim 8 of the '121 patent corresponds to claim 19 of that



application. Claim 10 of the '121 patent corresponds to claim 23 of that application. Claim 11 of the '121 patent corresponds to claim 27 of that application. Claim 12 of the '121 patent corresponds to claim 28 of that application.

35. Claims 13 through 15 correspond to claims that were later submitted. Claim 13 of the '121 patent corresponds to claim 29 of the second continuation application. The origins of this claim can be traced back to Paper No. 28, submitted April 29, 1988. Claim 14 of the '121 patent corresponds to claim 30 of the application. Claim 15 of the '121 patent corresponds to claim 31 of the application. The origin of these claims can be traced back to Paper No. 30, submitted October 7, 1988.

#### **PERSON OF ORDINARY SKILL IN THE ART**

36. The claims and the specification of the '121 patent itself make clear that the relevant person of ordinary skill in the art would have experience with television signals. The words of the claims themselves show that the claims are limited to "video." The one embodiment of the '121 patent describes an electronic still store for use in television broadcast. As I have noted, the specification itself states that the asserted invention is to be used "for television broadcast signals." ('121 patent, col. 1, lines 11-14.)

37. A person of ordinary skill in the art as of April 8, 1983 would be an individual with a bachelor's degree or the equivalent in electrical engineering or computer science and a few years of work experience relating to image capture, processing, and/or display.

38. Alternatively, a person of ordinary skill may have more education, perhaps a masters' degree, but less work experience. The person need have sufficient education and/or experience to be able to read technical documents that describe video input, frame stores, disk

stores, and the like.

39. I base my opinion regarding the field of the invention and the level of ordinary skill in the art: (1) on the '121 patent itself, which uses terminology known to engineers in the television broadcast industry or who worked with television image data at the time, and which states that the "invention relates to a digital electronic still store for broadcast television signals" ('121 patent, col. 1, lines 11-12); and (2) on my own 25 plus years of experience working with and studying digital images, including images derived from television signals, as well as my experience as a professor teaching students to become skilled in the art of digital image processing.

40. In analyzing claim terms of the '121 patent, I do so from the perspective of one of ordinary skill in the relevant art as described above.

#### **CLAIM CONSTRUCTION AND ANALYSIS**

41. I understand that the meaning of several claim terms of the '121 patent are in dispute.

42. I have been asked to explain what a person of ordinary skill in the art of the '121 patent, as of April 8, 1983, would understand certain terms, as used in one or more of the asserted claims 7, 8 and 10-15, to mean. I provided a detailed claim element by claim element non-infringement analysis in my Initial Expert Report.

43. In addition to reviewing the '121 patent, the references cited in the '121 patent, and the '121 patent's prosecution history, and the other materials identified above, I have read Ampex's Preliminary Claim Construction Statement dated March 25, 2005 (attached to Dr.

George Ligler's expert report), Ampex's Supplemental Preliminary Claim Construction Statement dated May 9, 2005, Ampex's Second Supplemental Preliminary Claim Construction Statement dated May 27, 2005, and Ampex's Claim Construction Statement dated July 15, 2005, all submitted in the International Trade Commission investigation. I have also reviewed Ampex's Identification of Claim Construction Issues submitted on November 4, 2005 and its Corrected Identification of Claim Construction Issues submitted on March 24, 2006.

44. Below, I have provided my opinion concerning what a person of ordinary skill in the art of the '121 patent, as of April 8, 1983, would understand the following terms, used in one or more of the asserted claims 7, 8 and 10-15, to mean:

**1. "video"**

45. Each of the asserted claims requires the image data that is stored in random access memory and bulk memory to be "video" data.

46. In the '121 patent, the term "video" is synonymous with the picture portion of a television signal. Thus, it is my opinion that a person of ordinary skill in the art would understand that video as used in the patent entailed the electronic transmission and rapid display of related electronic image frames to provide the illusion of movement to the viewer. My opinion is based upon my review of the '121 patent, the file history of the patent, the prior art cited, and what I consider to be the plain meaning of the term.

47. In 1983 (the time of the filing of the '121 patent), a person of ordinary skill in the art would understand that still store systems were used in the television broadcast industry to capture and store frames of image data from a series of related images representing a moving image. The "capture" of a frame of a video image entails singling out one of the multiple frames

input into the system. The specification specifically notes that the “video input circuit may be another electronic still store system, a TV camera, or some other source of video data from which one or more frames of a video image may be captured.” (‘121 patent, col. 2, line 65 – col. 3, line 1.) Claim 7 specifically refers to a “succession” of images, which connotes a series of individual frames of a video image, as in a television signal having 30 frames a second.

48. In addition, “video” was understood to refer to television broadcast signals. This definition is based on a common-sense understanding of the term at the time of the application, and is supported by the claims and the specification of the ‘121 patent.

49. The introduction to the ‘121 patent speaks of “television broadcast.” The one embodiment speaks of video input in the form of an NTSC television signal. An NTSC television signal is the standard television signal broadcast in the United States in the 1980’s. The single figure of the patent shows a video input going into an A/D converter. Several of the claims speak of an “electronic still store,” which a person of ordinary skill in the art would understand to mean a special device in the industry for capturing one frame from the multiple frames of an incoming video signal.

50. Finally, the plain and ordinary meaning of “video” as set forth in dictionary definitions that I have reviewed supports my understanding of the term as set forth above. Webster’s Third New International Dictionary (1981), defines “video” as “relating to or used in the transmission or reception of the television image.” The Broadcast Communications Dictionary (1978) defines “video” as the “picture portion of television broadcast.”

51. Given that video is a series of related images representing a moving image, such as television images, a single video image is a single frame from a video signal.

52. I understand that Ampex has provided several definitions for “video” over the course of this litigation. While Ampex’s definitions of “video” have varied, they are all too broad because they do not appear to limit the “electronic signal” in any significant way. The use of the term “video image” in the patent and the claims demonstrates an intent to refer to and claim a particular type of image, not all electronic images. However, by Ampex’s various definitions, *all* electronic signal information that represents a visual object is video. Under this definition, an electronic fax transmission would be video and the signal information in a photocopy machine would be video. However, no person of ordinary skill in the art would consider either of these, or any other still image, to be a video image.

53. Dr. Ligler and Ampex seek to divorce the concept of “video” from the common notion of video as a series of related frames rapidly displayed and rapidly replaced. Even under their newer definition, Ampex does not explain how electronically sensed image data can be anything other than video. In other words, Ampex does not explain how pixel data and video pixel data differ.

## 2. “data”; “said ... data”

54. Each asserted claim refers to “data.”

55. It is my opinion that a person of ordinary skill in the art would understand the term “data” as used in the ‘121 patent to refer to a collection of numbers. My opinion is based upon my review of the ‘121 patent, the file history of the patent, the prior art cited, and what I consider to be the plain meaning of the term.

56. The claims refer to “video pixel data.” Pixels are the basic units of composition of an image. Thus, a person of ordinary skill in the art in the 1983 time frame would understand

“video pixel data” to be numbers or values representing the intensity or color of pixels of an image that was derived from a video signal (a signal carrying multiple frames of a television image).

57. This understanding is supported by the specification of the ‘121 patent, which in its single embodiment describes that the pixel data placed in the frame store came from a “video input circuit, [which] may be another electronic still store system, a TV camera, or some other source of video data from which one or more frames of a video image may be captured.” (‘121 patent, col. 2, line 65 – col. 3, line 1.)

58. By using the terms “said” or “the” to describe the image data, the claims make clear that the same image data is being transferred between storage locations and used for generating reduced size image data. In the context of the asserted claims, “the ... data” or “said ... data” refers back to the *same* data first referenced in each claim: the data in the random access memory (claims 7, 8, and 11); the data in the first store (claim 10); the data supplied by an external source (claim 12); or the data sets provided at a first resolution (claims 13-15).

59. I understand that Ampex has argued that “[s]ubsequent to its initial generation, video pixel data representing a video image may be further processed or transformed (*e.g.*, to conform to different representation conventions, to enhance the representation of the image, or to compress the data), and as such is still properly characterized as the video pixel data representing the video image.” I do not agree with this assertion.

60. First, the ‘121 patent does not describe any of these possibilities. The “full” size video pixel data that is input into the system claimed in the ‘121 patent is not described as being altered or transformed in any way after analog to digital conversion of the signal (except for the

creation of an additional image, the reduced size image).

61. The video data input into the frame store is merely described as being transferred to the size reducer and the bulk store, accessed from the bulk store, and transferred to the frame store in the same way that it came in originally into the frame store, i.e., as video data.

62. The resolution and pixel values of the full size image do not change, thus it is proper to characterize it as the same full size image in RAM, bulk store and the size reducer.

63. Second, a person of ordinary skill in the art would not understand image data that has been processed or transformed to be the same as unprocessed or untransformed data. A person would understand that processed or transformed image data is *different*, because the numbers or values that make up the data have changed.

64. Finally, a user of a still store system would expect that the data stored in the still store and then output for broadcast as a television signal would be the same as the data input into the system, so that, for example, a news broadcast would always show the same image with the same data.

### 3. “direct”; “directly”

65. Claim 7 requires the “direct transfer” of image data between “bulk storage” and “random access memory.” Claim 8 requires the transfer of images “from said bulk storage memory directly into said random access memory means.” Claim 10 requires video data to be transferred “from said second store directly to said first store.”

66. A person of ordinary skill in the art would understand that each of these phrases requires that the transfer of image data between the two storage devices be without interruption

or intervening circuitry. My opinion is based upon my review of the '121 patent, the file history of the patent, the prior art cited, and what I consider to be the plain meaning of the term.

67. Paper No. 30 fully supports the plain meaning of the term "direct" that I have ascribed to it, when it notes that the amended claims require the bulk memory to transfer the image data "directly back to the random access memory means, *with no other circuitry therebetween.*" (emphasis added).

68. A person of ordinary skill in the art looking at a block diagram of a system such as shown in the Figure of the patent, would understand that a direct transfer between boxes on the diagram would mean that there is no box in between that would permit significant processing.

69. A person of ordinary skill in the art would not understand a direct transfer to be the transfer of data between bulk storage and random access memory with central processing unit intervention for every unit of transfer. This is precisely the type of transfer that a person of ordinary skill in the art would not consider to be direct. A block diagram of such a transfer would show the data transferring into the central processing unit first, then back out to the random access memory. A block diagram of a direct transfer would indicate a direct line between the bulk store and the random access memory, just as is shown in the '121 patent.

70. The one figure included in the patent depicts two uninterrupted lines between the bulk store (disk store 24) and the random access memory (frame store 22). These lines connect the bulk store and the random access memory blocks directly, without passing through the CPU or any other circuitry that would permit processing.



71. Similarly, the random access memory (frame store 22) and the size reducer (26) are connected by two direct lines, without passing through any other circuitry. A person of ordinary skill in the art reading the '121 patent would thus understand that "direct transfer" requires the transfer of data without interruption or intervening circuitry.

**4. "random access memory means having an input port and an output port"**

72. Claims 8 and 14 both require a "random access memory means having an input port and an output port."

73. It is my understanding, based on the language chosen, that a person of ordinary skill in the art would understand that these claim terms require that the random access memory must have at least two ports, one for input and one for output. My opinion is based upon my review of the '121 patent, the file history of the patent, the prior art cited, and what I consider to be the plain meaning of the term.

74. A person of ordinary skill in the art would not consider a single port that allowed for rapid input and output to be covered by these claims. All random access memory is by definition accessible, and in order to be accessible random access memory must have a port and must be able to input and output data. Thus, if a single-port random access memory were to be considered covered by the scope of these claims, then the phrase "having an input port and an output port" would be redundant to the phrase "random access memory."

75. A random access memory with a single port, even if multiplexed in the most efficient manner (i.e., allowing for rapid input and output of data), does not allow for the simultaneous input and output of data, whereas a dual-port (or multi-port) random access memory does allow for input and output of data at the same time. This is a difference that a

person of ordinary skill in the art would recognize, especially given that frame stores at the time of filing of the patent often were dual-ported.

76. A person of ordinary skill in the art comparing claim 8 to claim 7, for example, would see that claim 7 requires “random access memory” without further modifiers, and that claim 8 requires the random access memory to have an input port and an output port. This person of ordinary skill would understand that there is a difference between the two, in that claim 7 does not necessarily limit the type of random access memory used, whereas claim 8 does limit the random access memory to at least two ports.

#### **5. “full” size image**

77. The claims require image pixel data at a particular “full” resolution.

78. Given that the images must be from video, a person of ordinary skill in the art would understand that the “full” size image described in the claims is the image derived from the incoming video signal. As used in the ‘121 patent, the meaning of the phrase “full size image” is an image that is the same size (resolution) as the television display and therefore occupies the full screen of the television display, but no more. My opinion is based upon my review of the ‘121 patent, the file history of the patent, the prior art cited, and what I consider to be the plain meaning of the term and how it is used in the claims.

79. My understanding is consistent with the use of the phrase “full size image” in the specification. The specification of the ‘121 patent explains in detail that a “full” size image takes up all 484 lines of video data in a standard television frame of video data. See ‘121 patent, col. 3, lines 55-67.

## 6. “selectively”; “selective”

80. The final element of claim 7 of the ‘121 patent contains the requirement of “selectively generating” reduced size images. Claims 10, 11, and 14 use the terms “selective” or “selectively” to modify the transfer of data.

81. A person of ordinary skill in the art would understand that the term “selectively generating” means that there is an element of choice in whether to generate a reduced size image. In other words, given the chance, there is a choice whether or not to generate a reduced size image. My opinion is based upon my review of the ‘121 patent, the file history of the patent, the prior art cited, and what I consider to be the plain meaning of the term.

82. This definition for the term “selectively” is consistent with the way in which the terms “selected” and/or “selectively” are used elsewhere in the claims. For example, Claims 7, 10 and 11 require the “selective[]” transfer of either a full size image or a reduced size image[s] from one storage location to another. Clearly these claims allow for a choice between one or the other alternative. The selection is not automatic.

83. I understand that Ampex contends that reduced size images are automatically generated for each full size image. The specification of the ‘121 patent, however, provides no support for the proposition that reduced size images must automatically be generated for each full size image, and in fact supports the opposite conclusion.

84. The ‘121 patent notes that “when video data received from disk store does not contain a corresponding quarter spatial resolution copy, size reducer *may* be employed to generate a quarter spatial resolution copy for subsequent transfer to either frame store or disk store. Hence, any time frame store receives a video image frame that does not have a

corresponding quarter resolution copy, the size reducer *may* be used to make such a copy.” See col. 4, lines 7-15. This passage makes explicit that the system can have a full size image stored on the disk store that does not have a corresponding reduced size version, and that there is still a choice whether to create a reduced size version even if there is not one already.

85. The final limitation of claim 14 requires the “selective transfer” of a reduced size image from a size reducer to bulk storage. Similar to the “selectively generating” requirement of claim 7, this claim limitation allows for a choice to be made whether or not to transfer the reduced size image. In other words, the transfer is not automatic, but is instead a product of choice.

#### **7. “responsive to”**

86. Claims 7, 8, 12, and 14 each use the phrase “responsive to.”

87. It is my opinion that a person of ordinary skill in the art would understand the phrase “responsive to”, as used throughout the claims, to mean “to be coupled to so as to be able to receive data from.” As applied to claims 7, 8, and 14, therefore, “responsive to said random access memory” means to be coupled to the random access memory, so as to be able to receive data from the random access memory. My opinion is based upon my review of the ‘121 patent, the file history of the patent, the prior art cited, and what I consider to be the plain meaning of the term.

88. Ampex argues, based on citation to Paper 13 of the ‘121 prosecution history, that the size reducer being “responsive to” random access memory, as found in claims 7, 8, and 14, means automatically under processor control.

89. I do not agree with this construction. First, a person of ordinary skill in the art reading these claims would understand that the size reducer being "responsive to" the random access memory simply means that the size reducer is coupled to the random access memory so as to be able to receive data from and send data to the random access memory. This construction is primarily based on a plain reading of the claims themselves, which describe the size reducer receiving image data from the random access memory, generating a reduced size image, and sending that reduced size image back to random access memory.

90. My understanding is further supported by claim 12, which uses the term "responsive to" three times to describe couplings and data transfer between the "memory" and the "image store" and the "external source," and between the memory and the "means for displaying the output image" (which is described as a monitor). Unless, for example, the claim were to be understood to require automatic transfer of data from the image store to the memory every time data was in the image store, which would be an impractical reading of the claim, the term "responsive to" must be used to refer to two components that are coupled so that data can be transferred between them.

91. As such, it is clear from a plain reading of the claims that "responsive to" neither suggests "automatically," nor does it suggest "under processor control." Neither of these requirements is explicitly or implicitly found in the claims.

92. Ampex made its arguments in Paper 13 before any of the claims that led to claims 7, 8, and 14 were even submitted for consideration. The pending claims being discussed in Paper 13, pending claims 12 and 14, were abandoned and never issued. Further, the language in pending claims 12 and 14 required "writing into the image store for each said full resolution

image...video data representing a reduced resolution image frame copy thereof, *in response to said writing into the image store* video data representing a plurality of full resolution image claims."

93. In addition to the use of different wording, there is a difference between producing the reduced size image in response to writing the original data into the frame store, as argued in the file history, and simply having the size reducer be responsive to the memory itself. Producing a reduced size image in response to writing the data may suggest some automatic action, but simply describing one structure as responsive to another structure, without a reference to any triggering action, indicates only that the two structures are coupled so that one can communicate with the other. A person of ordinary skill in the art just would not import meaning into the issued claims 7, 8, and 14 from the unrelated arguments made by Ampex in Paper 13.

#### **8. Means Plus Function Limitations**

94. Claim 7 contains a means plus function limitation. The limitation states, "means responsive to said random access memory for selectively generating one of said corresponding reduced size versions." The limitation only describes function, not structure.

95. The function is "selectively generating one of said corresponding reduced size versions." The specification of the '121 patent does not describe any structure for performing this function. It provides no description of the algorithm or technique used to shrink an image. Although the figure in the patent has a box labeled "size reducer", it does not provide structure for that box. Without more, one of ordinary skill in the art would not know what that box is claimed to contain.

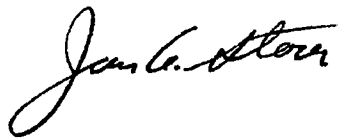
96. Claims 8, 12, and 14 each refer to “size reducer means” or “size reducing means.” For instance, claim 8 describes “size reducing means responsive to said random access memory means for directly receiving said video pixel data stored in said random access memory means representing said full size image at said first resolution, and for reducing said image to the reduced size image at the second lower resolution, and for supplying said reduced size image at said second resolution directly back to said random access memory means in a second group of memory locations therein.” This element also describes no structure, only the function of “size reducing.”

97. Claim 14 recites a similar function to that recited in claim 8. Like claim 8, claim 14 does not describe any structure for performing the size reduction.

98. Finally, claim 12 describes “a size reducer means for receiving from said memory the stored one of said full size image data sets, and for producing and returning to said memory the corresponding one of said reduced size image data sets.” As with claims 8 and 14, the “size reducer” means only describes function, not structure.

I declare under the penalty of perjury under the laws of the United States that the foregoing is true and correct.

Executed this 23rd day of May 2006 in Waltham, MA.



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James Storer